

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Claims 1, 10, and 16 have been amended, and Claims 14, 19, 30, 32, 35, 36, and 38-42 have been canceled. New claims 45-59 have been added. No new matter has been added. After entry of the claim amendments and new claims, Claims 1, 4, 8, 9, 11-16, 20, 21, 23, 33, 34, and 43-59 will be pending in this application.

I. Allowable Subject Matter

Applicants thank the Examiner for the allowance of Claims 35, 36, and 38-42. However, Claims 35, 36, and 38-42 have been canceled. Additionally, Claims 43 and 44 were objected to as being dependent upon a rejected base Claim 1, but would be allowable if rewritten in independent form. As described below, Applicants believe that, as amended, independent Claim 1 is in condition for allowance and, accordingly, Claims 43 and 44 have not been amended.

III. Claim Rejections Under 35 U.S.C. § 112

On page 2 of the Office Action, Claims 1, 4, 8-16, 19-21, 23, 30, and 32-34 were rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. The Examiner stated that the “claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s) ... had possession of the claimed invention.” Specifically, the Examiner asserted that the element “a wavelength division multiplexer (WDM) configured to route the data modulated pumping light to the plurality of optically pumped sources” of Claim 1, and the element “receiving data modulated pumping light from a plurality of optical network units via a wavelength division multiplexer (WDM)” of Claims 16, and 19 were not adequately described in the specification.

Independent Claims 1, 16, and 19 have been amended. Applicants respectfully submit that support for the claim amendments can be found throughout the specification. Claim 1 has

been amended to recite, in part, that the “optical router comprises a wavelength division multiplexer (WDM) configured to receive the data modulated transmission light from the plurality of optically pumped sources, and route the data modulated transmission light to the hub.” Claims 16 and 19 have been amended to recite, in part, “receiving the data modulated transmission light at the WDM from the plurality of optically pumped sources” and “routing the data modulated transmission light ... to a hub with a passive optical router.” Applicants respectfully submit that support for these claim amendments can be found throughout the specification, particularly in paragraph [0056]. Paragraph [0056] of the specification states:

In the kerbside unit 208 data modulated pumping light is supplied to each of the optically pumped sources 212. The optically pumped sources 212 have predefined wavelength channels, which correspond to those wavelengths of light suitably routed by the WDM 210. The data modulated pumping light is used by the optically pumped sources to form data modulated transmission light within the ONU's specified wavelength channel. The resultant data modulated transmission light is then transmitted upstream to the WDM 210 which routes the light, and thus the data traffic, according to its wavelength. Once routed, the data modulated transmission light is then transmitted upstream along the optical fibre link 206 to the hub 202.

Applicants respectfully request reconsideration and withdrawal of the rejection of Claims 1, 4, 8-16, 19-21, 23, 30, and 32-34 were rejected under 35 U.S.C. § 112, first paragraph.

III. Claim Rejections Under 35 U.S.C. § 103

Claims 1, 4, 8-10, 13-16, 19, 21, 23, 30, 32, and 33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,706,111 (“Morales”) in view of “A Low-Cost WDM Source with ASE Injected Fabry-Perot Semiconductor Laser,” IEEE Photonics Technology Letters, Vol. 12, No. 8, August 2000, pages 1067- 1069, by Kim, et al. (“Kim”), “Semiconductor Optical Amplifier-Based All-Optical Gates for High-Speed Optical Processing,” IEEE Journal on Selected Topics in Quantum Electronics, Vol. 6, No. 6, November/December

2000, pages 1428-1435, by Stubkjaer ("Stubkjaer"), and U.S. Publication No. 2004/0252738 ("Hill").

As amended, Claim 1 recites, in part, that the "optical router comprises a wavelength division multiplexer (WDM) configured to receive the data modulated transmission light from the plurality of optically pumped sources, and route the data modulated transmission light to the hub." As amended, Claim 16 recites, in part, "receiving the data modulated transmission light at the WDM from the plurality of optically pumped sources" and "routing the data modulated transmission light, via the WDM, ... to a hub with a passive optical router." As amended, Claim 19 recites, in part, "receiving the data modulated transmission light at the WDM from the plurality of optically pumped sources" and "routing the data modulated transmission light ... to a hub with a passive optical router." Applicants respectfully submit that Morales, Kim, Stubkjaer, and Hill, alone or in combination, fail to disclose, teach, or suggest these elements.

Column 4, lines 27-30 of Morales discloses "an access node AN that concentrates and/or multiplexes the optical signals of the optical network terminating (ONT) units in order to access the optical switching centre mentioned CE." On page 7 of the Office Action, the Examiner analogized the optical access boards (OABs) of Morales to the "optically pumped sources" of Claims 1, 16, and 19.

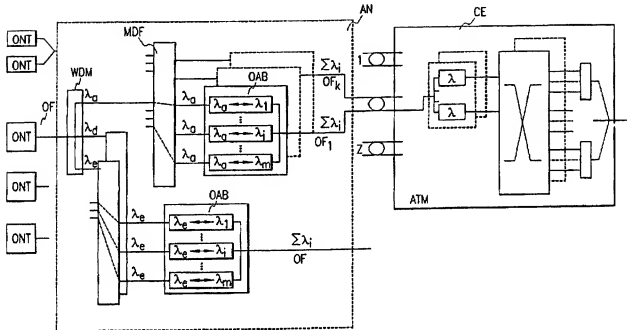
Column 5, lines 1-9 of Morales states:

The access node AN also has a wavelength demultiplexer-multiplexer WDM for each subscriber, which demultiplexes the different wavelengths λ_b , λ_d , λ_e of each service originating in the subscriber premises and directs each of these to the corresponding plane of service in the access node AN; in the opposite direction, it multiplexes the different wavelengths λ_b , λ_d , λ_e coming from the corresponding planes of service in the access node AN and sends them to the subscriber premises.

Column 5, lines 14-24 of Morales states (with emphasis added):

Finally, at the access node AN there is a set of k optical access boards OAB for each plane of service, which performs the following functions: ... the multiplexing of the m different wavelengths over one of the optical fibers that connect to the center.

Fig. 2 of Morales is illustrated below for convenience:



As such, Morales teaches only that an optical access board (which the Examiner analogized to the optically pumped source) multiplexes optical signals onto an optical fiber for transmission to an optical switching center. However, Morales fails to disclose, teach, or suggest an “optical router comprises a wavelength division multiplexer (WDM) configured to receive the data modulated transmission light from the plurality of optically pumped sources, and route the data modulated transmission light to the hub,” as recited in Claim 1, or “receiving the data modulated transmission light at the WDM from the plurality of optically pumped sources” and “routing the data modulated transmission light, via the WDM, ... to a hub with a passive optical router,” as recited in Claims 16 and 19. In contrast, the WDM of Morales receives signals

directly from the ONTs and directs the signals to the MDFs (see Morales; Fig. 2 and column 4, line 59 to column 5, line 13).

Kim teaches a Fabry-Perot semiconductor laser diode that receives amplified spontaneous emission (ASE) from an ASE source and a pseudorandom bit sequence from a pattern generator. (See Abstract and Fig. 1). However, Kim fails to disclose, teach, or suggest an “optical router comprises a wavelength division multiplexer (WDM) configured to receive the data modulated transmission light from the plurality of optically pumped sources, and route the data modulated transmission light to the hub,” as recited in Claim 1, or “receiving the data modulated transmission light at the WDM from the plurality of optically pumped sources” and “routing the data modulated transmission light ... to a hub with a passive optical router,” as recited in Claims 16 and 19.

Stubkjaer is directed to the use of semiconductor optical amplifiers for use as wavelength converters. (See Abstract). Hill is directed to the use of rare earth doped group IV semiconductor nanocrystal material in the construction of lasers and LEDS. (See Abstract). However, neither Stubkjaer nor Hill disclose a wavelength division multiplexer. As such, both Stubkjaer and Hill fail to disclose, teach, or suggest an “optical router comprises a wavelength division multiplexer (WDM) configured to receive the data modulated transmission light from the plurality of optically pumped sources, and route the data modulated transmission light to the hub,” as recited in Claim 1, or “receiving the data modulated transmission light at the WDM from the plurality of optically pumped sources” and “routing the data modulated transmission light ... to a hub with a passive optical router,” as recited in Claims 16 and 19.

For at least these reasons, Applicants respectfully submit that Morales, Kim, Stubkjaer, and Hill, alone or in combination, fail to disclose, teach, or suggest each and every element of independent Claims 1, 16, and 19. As such, Applicants respectfully requests reconsideration and allowance of Claims 1, 16, and 19 and Claims 4, 8-10, 13-15, 21, 23, 30, 32, and 33 (which depend from Claims 1, 16, and 19) under 35 U.S.C. § 103(a).

On page 18 of the Office Action, Claims 11, 12, 20, and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over a combination of four different references, namely Morales in view of Kim, Stubkjaer, and U.S. Patent No. 6,434,175 ("Zah"). Applicants respectfully that the rejection is moot in view of the amendments to Claims 1, 16, and 19.

Zah fails to remedy the deficiencies noted above with respect to Morales, Kim, and Stubkjaer as related to Claim 1. Zah is direct to a "multiwavelength laser [that] includes a phasor portion (2) for providing wavelength accuracy and a DBR portion ... for forming a laser cavity." (Abstract). Zah teaches a "phasor multiplexer 320 located in the middle of a laser cavity 142." (Column 4, lines 27-28). Zah further teaches that the phasor multiplexer provides "intercavity wavelength filtering." (Column 4, lines 10-11). However, Zah fails to disclose, teach, or suggest an "optical router comprises a wavelength division multiplexer (WDM) configured to receive the data modulated transmission light from the plurality of optically pumped sources, and route the data modulated transmission light to the hub," as recited in Claim 1, or "receiving the data modulated transmission light at the WDM from the plurality of optically pumped sources" and "routing the data modulated transmission light ... to a hub with a passive optical router," as recited in Claims 16 and 19.

As such, Applicants respectfully submit that Claims 11, 12, 20, and 34 are also patentable based at least on their dependence from Claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of Claims 11, 12, 20, and 34 under 35 U.S.C. § 103(a).

IV. New Claims 45-59

New Claims 45-59 have been added. Applicants respectfully submit that no new matter has been added. Support for Claims 45-59 can be found throughout the original claims and the specification, for example in paragraphs [0049]-[0058]. New independent Claim 45 recites, in part, an "optical router [that] comprises a wavelength division multiplexer (WDM) configured to receive the data modulated transmission light from the plurality of optically pumped sources, and

route the data modulated transmission light to the hub.” New independent Claim 53 recites, in part, “receiving the data modulated transmission light at the WDM from the plurality of optically pumped sources” and “routing, using the WDM, the data modulated transmission light for transmission to a hub based on the respective distinct wavelength channels.” As discussed above, Morales, Kim, Stubkjaer, and Hill, alone or in combination, fail to disclose, teach, or suggest such elements. Accordingly, Applicants respectfully request favorable consideration of new Claims 45-59.

* * *

It is submitted that each outstanding objection and rejection to the Application has been overcome, and that the Application is in a condition for allowance. Applicants request consideration and allowance of all pending claims.

It should also be noted that although arguments have been presented with respect to certain claims herein, the recited subject matter as well as various other subject matter and/or combinations of subject matter may be patentable for other reasons. Further, the failure to address any statement by the Examiner herein should not be interpreted as acquiescence or agreement with such statement. Applicants expressly reserve the right to set forth additional and/or alternative reasons for patentability and/or allowance with the present Application or in any other future proceeding, and to rebut any statement presented by the Examiner in this or other papers during prosecution of the present Application.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to

Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,



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